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Help

Logout

Interrupt

Main Menu

Search Form

Posting Counts

Show S Numbers

Edit S Numbers

Preferences

Cases

Search Results -

Terms	Documents
L4 and (tri!oxysilane)	4

Database:

US Patents Full-Text Database
 US Pre-Grant Publication Full-Text Database
 JPO Abstracts Database
 EPO Abstracts Database
Derwent World Patents Index
 IBM Technical Disclosure Bulletins

Search:

L5

Refine Search



Clear

Search History

 DATE: Monday, March 17, 2003 [Printable Copy](#) [Create Case](#)
Set Name Query

side by side

Hit Count Set Name

result set

DB=DWPI; PLUR=YES; OP=ADJ

<u>L5</u>	L4 and (tri!oxysilane)	4	<u>L5</u>
<u>L4</u>	L3 and (heat\$3 or \$2radiation)	65	<u>L4</u>
<u>L3</u>	L2 and sil\$8	225	<u>L3</u>
<u>L2</u>	L1 and coating and glass\$5	500	<u>L2</u>
<u>L1</u>	dispers\$3 and \$3oxy	14586	<u>L1</u>

END OF SEARCH HISTORY

WEST[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)[Cases](#)**Search Results -**

Terms	Documents
"antigel" and coating and sil\$5	3

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US Patents Full-Text Database
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EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search:

L1

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L1 "antigel" and coating and sil\$5 3 L1

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L4: Entry 24 of 39

File: DWPI

Jan 7, 1992

DERWENT-ACC-NO: 1992-041030

DERWENT-WEEK: 199205

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TITLE: Increasing particle size of ziegler -natta type catalysts - for olefin polymerisation by treating with mixt. of alkoxide of titanium, vanadium or zirconium aluminium alkyl to form ppte.

INVENTOR: LEE, C C

PRIORITY-DATA: 1990US-0516855 (April 30, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 5079204 A	January 7, 1992		000	

INT-CL (IPC): C08F 4/64

ABSTRACTED-PUB-NO: US 5079204A

BASIC-ABSTRACT:

The particle size of particulate olefin polymerization catalysts is increased by treating with (i) a liq. contg. a metal alkoxide (I), where the metal is Ti, V or Zr and (ii) an aluminium alkyl (II); causing (I) and (II) to react to form a ppte.; and recovering the resulting solid. (I) has formula $Ti(OR)_nX_{(1-n)}$ and (ii) has formula $AlR_mX_{(3-m)}$; $n = 1-4$ and $m = 1-3$; X = halogen and R = independently 1-6C alkyl. A combination of titanium tetraethoxide (TTE) and ethyl aluminium sesquichloride (EASC) is esp. suitable. Mole ratio (I):(II) = 10:1-1:10. Opt. a polysiloxane (e.g. low mol. wt. polydimethylsiloxane) may be included in the liq. to assist in agglomeration.

USE/ADVANTAGE - Many of the methods used to make high (or even low) activity Ziegler-Natta type olefin polymerization catalysts produce particulate catalyst compsns. contg. undesired 'fines' which result in polymers contg. a corresp. undesirable level of 'fines', which in both cases can lead to handling problems. The inventive procedure, which is applicable to any such catalyst, provides a simple method of overcoming the problem and results in polymers contg. little or no material passing a 200 mesh sieve.

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L3: Entry 6 of 15

File: USPT

Sep 28, 1999

US-PAT-NO: 5958822

DOCUMENT-IDENTIFIER: US 5958822 A

TITLE: Modified fluorosulfonic acids

DATE-ISSUED: September 28, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Beckerbauer; Richard	Wilmington	DE		
Harmer; Mark Andrew	Wilmington	DE		
Sun; Qun	Wilmington	DE		

US-CL-CURRENT: 502/168; 502/151, 502/217, 556/428, 560/231, 568/32

ABSTRACT:

This invention concerns modified fluorosulfonic acid compounds possessing a sulfonic acid fluoride, chloride or ester group or a sulfonic acid or a salt of a sulfonic acid group at one end and respectively a hydrolyzable or hydrolyzed silane group at the other end, said sulfonic group being adjacent a substantially fluorinated bidentate hydrocarbylene group which is in turn adjacent to a hydrocarbylenegroup linked to said hydrolyzable or hydrolyzed silane group. Self-condensation of the latter compounds provides novel siloxanes and polysiloxanes. This invention further concerns novel composites comprising a metal oxide network having incorporated therein a group having the formula: $--O--Si(OH)_n-R_1-R_2-SO_3Q$, and compositions comprising a solid material having a reactive surface to which surface is attached at least one group having the formula: $--O--Si(OH)_n-R_1-R_2-SO_3Q$.

35 Claims, 0 Drawing figures Exemplary Claim Number: 1

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L4: Entry 33 of 39

File: DWPI

Jan 30, 1990

DERWENT-ACC-NO: 1990-072618

DERWENT-WEEK: 199010

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TITLE: Heat-resistant optical fibre for communications - has hardened liq. precursor by reacting e.g. titanium alkoxide with poly:siloxane with terminal silanol gp.

PRIORITY-DATA: 1988JP-0176996 (July 18, 1988)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 02027305 A	January 30, 1990		004	

INT-CL (IPC): D01F 8/10; G02B 6/00

ABSTRACTED-PUB-NO: JP02027305A

BASIC-ABSTRACT:

Fibre comprises a hardened matter of a liq. precursor almost without optical phase sepn. obtd. by the reaction of metal alkoxide and polysiloxane contg. terminal silanol group as the core component and a polymer of more than 0.01 lower refractive index than that of the core component as the sheath component, and the light transmission loss of the fibre at 650 nm. being less than 700 dB/Km.

Metal alkoxide is pref. e.g. alkoxide of Ti, Si, etc. The deg. of polymerisation of polysiloxane contg. terminal silanol group is pref. 1-5,000, esp. 1-1,000. The reaction of the metal alkoxide and the polysiloxane is carried out in the presence of water and a catalyst (e.g. inorganic acid such as hydrochloric acid). The low refractive index thermoplastic polymer used as the sheath component is e.g. polytetrafluoroethylene, tetrafluoroethylene-hexafluoropropylene copolymer, etc..

USE/ADVANTAGE - The optical fibre has good flexibility and heat resistance. Optical communication of some hundred metres can be carried out by the optical fibre even under severe environment.

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L4: Entry 37 of 39

File: DWPI

Feb 1, 1984

DERWENT-ACC-NO: 1984-031200

DERWENT-WEEK: 198406

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TITLE: Polysiloxane gels suitable for prodn. of optical fibres - obt'd. by controlled doping with metals of partly hydrolysed silicon alkoxide(s)

INVENTOR: GONZALEZOL, C; HARMER, A L ; PUYANE, R

PRIORITY-DATA: 1982EP-0810317 (July 26, 1982)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 99440 A	February 1, 1984	E	017	
DE 3270991 G	June 12, 1986		000	
EP 99440 B	May 7, 1986	E	000	
JP 59030823 A	February 18, 1984		000	
US 4495297 A	January 22, 1985		000	

INT-CL (IPC): C03B 37/02; C03C 3/04; C08G 77/58

ABSTRACTED-PUB-NO: EP 99440A

BASIC-ABSTRACT:

Doped gels of formula (I), where ME is one or more dopant metals, and R is pref. 1-4C alkyl, are obt'd. by adding water to an organic soln. of silicon alkoxide, opt. contg. ME alkoxide, and allowing a wet gel to form by hydrolysis and polycondensation; then contacting the gel with a waterless organic soln. of silicon alkoxide, opt. contg. ME alkoxide, and allowing the metals to diffuse either from the gel into the organic soln., or vice-versa.

The gels can be converted to glass of very high purity by conventional techniques. In the shape of cylinders they are esp. useful as preforms for making optical articles with controlled graded refractive index, e.g. optical fibres.

ABSTRACTED-PUB-NO:

EP 99440B EQUIVALENT-ABSTRACTS:

A method for the preparation of a polysiloxane doped gel of following general exemplifying structure (1) in which ME refers to one or several dopant metals and R means alkyl groups, comprising the following steps: (1) making an organic solution of silicon alkoxide containing or not containing one or more dopant metals as alkoxides and progressively hydrolysing part of said alkoxides into the corresponding hydroxy functions with consecutive polycondensation by dehydration of said OH functions to a cross-linked polysiloxane back-boned wet gel, (2) contacting said wet gel with a waterless organic solution of silicon alkoxide containing or not containing one or more dopant metals alkoxides and not letting the metals including silicon in still free unpolymersed form migrate by diffusion either from the gel into the organic solution or vice-versa, the direction of migration being from the richer to the leaner of the two phases. (9pp)

US 4495297A

Prepn. of a polysiloxane doped gel of structure (I) (where M is a dopant metal and K is alkyl) comprises making an organic soln. of silicon alkoxide and adding water to progressively hydrolyse part of the alkoxide into the corresp. hydroxy functions with consecutive polycondensation by dehydration of the hydroxy functions to a crosslinked polysiloxane backbone wet gel body.

This body as first phase is placed in contact with a body of waterless nongelling organic soln. of silicon alkoxide as second phase, with one of the phases contg. at least a dopant metal alkoxide.

The metals including silicon in still free unpolymerised form are allowed to migrate by diffusion from one phase to the other. to produce a smooth gradient profile across the doped gel of the

dopant metal.

USE - For conversion to high purity glass for prodn. of optical articles, e.g. fibres with controlled refractive index. (7pp)

WEST

Generate Collection

L5: Entry 21 of 29

File: USPT

Apr 5, 1994

US-PAT-NO: 5300564

DOCUMENT-IDENTIFIER: US 5300564 A

TITLE: Doped sol-gel glasses for obtaining chemical interactions

DATE-ISSUED: April 5, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Avnir; David	Jerusalem			ILX
Ottolenghi; Michael	Jerusalem			ILX
Braun; Sergei	Jerusalem			ILX
Zusman; Rivka	Jerusalem			ILX

US-CL-CURRENT: 525/54.1; 422/55, 422/56, 422/57, 435/174, 435/175, 435/176,
436/183, 436/8, 501/12, 501/32

ABSTRACT:

A method is proposed of obtaining a chemical interaction between at least one reagent trapped in sol-gel glass by doping it with the reagent, and diffusible solutes or components in an adjacent liquid or gas phase. The reagents, the solutes or the components can be any organic or inorganic compounds or materials of biological origin including enzymes. The doped sol-gel glass in various forms may be useful as analytical test, chromatographic medium, sensor, catalyst or biocatalyst, electrode or enzyme electrode, or other detection device.

26 Claims, 1 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 1

WEST

Generate Collection

L5: Entry 15 of 29

File: USPT

Mar 25, 1997

US-PAT-NO: 5614596

DOCUMENT-IDENTIFIER: US 5614596 A

TITLE: Double alkoxide monomers oligomers and polymers

DATE-ISSUED: March 25, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Laine; Richard M.	Ann Arbor	MI		
Bickmore; Clint R.	Ann Arbor	MI		
Waldner; Kurt F.	Belleville	MI		

US-CL-CURRENT: 525/389; 528/395, 549/3, 549/4, 556/1, 556/173, 556/179, 556/27, 556/28, 556/443, 556/81, 556/9

ABSTRACT:

A process for the preparation of polymetallooxanes employing inexpensive metal sources such as sand, alumina, and rutile involves dissolving one or more group IIIa, IVa, IVb metaloxy compounds such as metal oxides, metal hydroxides, or hydrates thereof with a di- or polyhydroxyl functional compound in the presence of an amine or alkanolamine. The polymetallooxane products are anionic, neutral, or mixed neutral/anionic moieties, which, when anionic, contain a metallic counterion (cation) or an ammonium or phosphonium ion. Mixed polymetallooxanes, as well as homo polymetallooxanes which may be prepared by the subject process, are suitable for use in preparing coatings, fibers, powders, ceramics, and glasses while being easily processable and economic to manufacture.

26 Claims, 5 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 5

WEST☐ Generate Collection

L5: Entry 9 of 29

File: USPT

Apr 18, 2000

US-PAT-NO: 6051665

DOCUMENT-IDENTIFIER: US 6051665 A

TITLE: Coating composition

DATE-ISSUED: April 18, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamada; Kinji	Tsukuba			JPX
Sato; Hozumi	Tsukuba			JPX
Hashiguchi; Yuichi	Tsukuba			JPX
Nishikawa; Akira	Tsukuba			JPX
Sugiyama; Naoki	Tsuchiura			JPX

US-CL-CURRENT: 525/477; 525/475, 525/539

ABSTRACT:

A coating composition comprising (A) a fluorine-containing polymer, (B) a compound represented by the following general formula (1) or a partial condensation product thereof,

SiR.sup.1.sub.n (OR.sup.2).sub.4-n (1)

wherein R.sup.1 represents an alkyl group, an aryl group, an aralkyl group, a group containing --SH, or a group containing --NCO, each containing 1 to 10 carbon atoms, R.sup.2 represents a hydrogen atom, an alkyl group or acyl group having 1 to 10 carbon atoms, and n is an integer from 0 to 3, and (C) a chelate complex derived from a metal alkoxide. The coating composition can efficiently form a transparent cured coating exhibiting superior adhesion to various substrates, excellent scratch resistance, excellent weatherability, and having a low refractive index.

8 Claims, 0 Drawing figures Exemplary Claim Number: 1